P R O S P E R I T Y
G A M E S
T U T O R I A L

Prosperity Game Tutorial

Introduction

Welcome to the select group of people who accepted our invitation to play in the Industrial Ecology Prosperity Game! Now that you have been assigned to a team and are eager to play, I know that you are trying to determine exactly what you are in for. This tutorial will provide you with a narrative introduction to the moves and mechanics of the game. If you are pressed for time and can only digest the handbook, you may skip this tutorial and still play a successful game. This material is intended only as a *supplement* to illustrate certain specific directions provided in the Player's Handbook; it does not provide any additional material required to play the game. Specifically, this tutorial addresses the four most important "steps" of playing a successful game:

1. *Personal preparation before the game.*
2. *Team orientation and planning at the beginning of the game.*
3. *Opening "moves" during the first session of active game play.*
4. *Follow-on moves during all subsequent game play.*

Step 1. **Pre-game** preparation

Advanced preparation is crucial for success.

Advanced preparation for the game is crucial for success. It will save you aggravation and frustration, and it will make your contributions during the game much more meaningful.

Three different sets of information are needed to play this game. The first involves learning the basic mechanics associated with participating in any Prosperity Game™.

The second type of information is related to the specific subject of this game – Industrial Ecology (IE). An appendix in the Players' Handbook provides an executive-level briefing on different aspects of IE that may be useful during the game. It is important for you to read this material. Panel discussions, posters, a summit meeting, and other media will also be used during the game to reinforce and build on your knowledge of IE.

The third category of information is the setting, background, scenario, or context in which the game is played. The game begins in the present in a real-world setting, and extends over the next decade. The playing fields are local, national, and international in scope. Teams may be engaged in any or all of these levels. With your team assignment in mind, you need to conduct an 'environmental' scan – become aware of the events taking place in these settings that will affect your team. An appendix (Scenario Briefings) has been provided in the Players' Handbook that contains several background studies. One part of this appendix, Team Descriptions and Challenges, provides internal information on your team (read this first) as well as external information on your potential competitors, partners and customers. The other three parts to this appendix provide selected briefing materials on local, national, and world conditions. However, game play is not restricted to this material. The experience and knowledge of all of the players should be applied in the game.

Pre-game Study Areas:

1. **game mechanics**
2. **Industrial Ecology concepts**
3. **game setting**

Step 2. Team planning

The first session of the game focuses on organizing your team and developing the strategic plans it will need to guide its moves.

Each team will have 5 to 9 players and 2 staff assigned. The players have generally been selected to represent their real-life roles (exceptions are made to balance the teams). The 'staffers' include a facilitator and an analyst/recorder; their job is to help you play the game and record your actions. The facilitator and analyst are instructed not to contribute content, but to be guides in the game process. **The players own the content of the game.**

Players own the game content.

As it is unlikely that you and your teammates have worked together before, it is important that you organize yourselves. Each team should develop its own ground rules for making decisions, decide who will play what roles on the team, assign responsibilities, and initiate processes for accountability and correcting errors.

Once your team's house is in order (no fighting please!), it is time to begin your game planning. It is probable that the only common information you and your teammates share is the information found in the Players' Handbook. As a team you must decide whether your individual study of this material is sufficient, or if you should briefly conduct an environmental scan as a team. It may also be important for you to understand how your future competitors, partners, and customers are defining themselves. It is now time to begin drafting concrete plans.

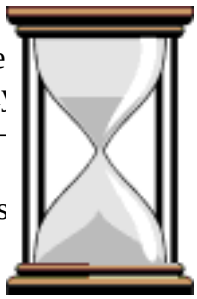
The first item for the plan is a ***simple*** statement describing the team's vision or mission. The starting point for this exercise is the description of your team found in the Player's Handbook.

Vision: A brief, clear and specific statement that captures the "who, what, and how" of the team.

This statement is to be captured in ***only two sentences*** "We represent …" and "Our goal is to … ." The vision for the team should be used as the context for selecting and refining team activities in pursuit of its strategies, including guidance on resource allocation. The vision should be used to give general direction for the team in the "future," a light showing the way amidst the confusion that **will** arise during the game.

Having a vision or mission makes it easier to identify the challenges or threats that your team will be facing. In drafting the vision, you should consider things like: what function is the team expected to perform and what are the players' interests; who are the team's suppliers, customers and competitors, and what are their interests; what did the environmental scan say about the current situation and the future; and where are the team's strengths (opportunities) and need for partners (weaknesses)? These considerations will also be important in developing the objectives and strategies that flow from the mission.

BE WARNED. Do not spend an undue amount of time in arriving at a consensus mission statement. You might find yourself with insufficient time for developing the strategies required for successful game play. You are only allotted ten minutes for this exercise. You do need to agree on who you are - who you represent – and what you are about. You do not need to expend effort in a carefully crafted statement to woo an imaginary organization. It is only your own team that is the beneficiary of this statement.



A mission statement for the Resource Providers Team MIGHT be something like the following example:

> *We represent the materials and energy suppliers, and the transportation and communication service industries required by a growing and prosperous world. Our goal is to be profitable while improving standards-of-living worldwide, supporting sustainable growth through conservation, recycling, and appropriate transition to use of renewable resources, and preserving biodiversity.*

In light of your team's vision or mission, you should now proceed to develop an appropriate set of challenges or threats that need to be addressed by your team through the strategies it develops and the moves it makes.

Challenge (threat): A statement of a potential problem or issue that may negatively impact you as a stakeholder group over the next ten to thirty years. Each threat may have multiple impacts.

From the perspective of the Resource Providers Team's mission, the challenges to consider should revolve around material resources, energy supplies, and transportation (as a service). One obvious challenge for this team stems from concern over oil supplies. This challenge might be written as:

> *Based on projected consumption patterns and ultimately recoverable resource estimates, the world will run out of oil in forty years.*

For this challenge, and every other challenge that you agree to tackle, a set of objectives should be developed.

Objectives: The desired future states or actions that meet a challenge.

Objectives are more than just a statement of negation of the challenge being addressed. They are high-level statements about possible solution paths or thrusts. They could be considered to be 'grand strategies.' A set of objectives for the challenge posed above might include the following:

1. *Develop transportation alternatives (e.g., fuels, modes, requirements).*
2. *Develop oil-fired electrical and thermal plant alternatives (i.e., oil-fired boilers in commercial power plants and industry).*
3. *Develop alternatives for petrochemical feed stocks.*

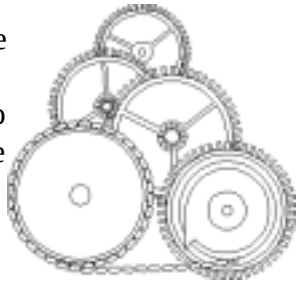
The last stage in your game planning process would be to decompose your selected objectives into a prioritized set of strategies.

Strategies: Potential actions that will achieve the desired future states (i.e., how you plan to accomplish your objectives and by when). These should be based on your capabilities and partnering opportunities (i.e., strengths and weaknesses).

The original definition of 'strategy' was what a general did. Prosperity Games™ are high-level interactive simulations about leadership and strategy development. In crafting strategies, and the agreements that support their execution, you must give appropriate consideration to the intended scope – not detailed like a tactic, yet not so lofty as to be without substance.

A set of strategies for the first example objective listed above might include the following:

1. *Develop alternative transportation "fuels," including consideration for liquefied gas (e.g., liquefied natural, coal, and inorganic gas), hydrogen, bio-fuels, and advanced batteries, to the point that down-selection and deployment can begin in ten years.*
2. *Reduce the pending impact (magnitude and timing) of the loss of oil through improved transportation efficiencies (e.g., high-efficiency vehicles, increased spread and utilization of mass transit systems, improved transportation infrastructure). Fleet efficiencies should be doubled in ten years. Major improvements in transportation system architecture should be available for deployment every five years.*
3. *Reduce the pending impact (magnitude and timing) of the loss of oil through reduced passenger and freight miles (e.g., efficient "cluster" communities, telecommuting). Major improvements in system architecture should be available for deployment every five years.*



Note that a degree of synergism often exists between the different strategie and objectives (and possibly even challenges). Success in one area may reduce or negate the needs in other areas, enable solutions in these areas, o exacerbate their problems. For a positive example, consider that within the objectives given above, a synergy might exist between solutions for the needs of oil-fired power plants and transportation as follows:

> *Nuclear power plants are used to replace oil-fired plants. During off-peak hours, the power generation capacity of the nuclear power plants is used to produce hydrogen as a vehicle fuel from the electrolysis of water.*

Within the context of the example strategies, consider the possibility that:

> *Cluster communities reduce the need for local travel (reduced transportation demand) and encourage the use of mass transit systems between communities (more efficient transportation mode).*

You should also consider applying systems thinking within each of your chosen strategies. In this manner you may find benefits through parallel solution paths, contingency plans, or even identify unforeseen solutions, all leading to a more robust strategy. Interactions with externalities will also be clarified in a proper systems approach, which will help to ensure that your solutions improve the "big picture" as well as the specific issue being addressed. For example, under the alternative transportation fuels strategy given above:

Apply systems thinking.

1. *Use of batteries or hydrogen will likely require a significant increase in the number of electric power plants, with their attendant environmental impacts.*
2. *Use of batteries will require a significant increase in the presence of related hazardous materials, and may impose new demands on non-renewable resources (e.g., rare materials required in advanced batteries).*
3. *Use of bio-fuels results in a significant performance and efficiency penalty, which is directly contrary to the desired advances in fuel use efficiency. Use of bio-fuels also reduces the land available for food production.*
4. *Use of liquefied gases may increase the problems with greenhouse gas emissions.*
5. *The different options available will all require more or fewer changes in the existing fuel production and distribution infrastructure, with a concomitant expenditure of capital and environmental concerns.*

It would probably be safe to assume that the best alternative transportation fuel source is not obvious to anyone when looking at such a list. Even if you sponsored all of the necessary R&D to allow any of these alternate-fuel paths to be implemented technically, Industrial Ecology (IE) tools will have to be applied if the optimum solution is to be found. If you read the briefing on IE in the handbook, you may recall that IE tools such as industrial metabolism and dynamic input-output modeling can be used to frame and analyze a problem of this nature. Their use will allow you to trade off decisions between cost, performance and environmental impact in an informed manner.

Your finalized planning document, including vision, challenges, objectives, and strategies, is a deliverable to the Control Team at the end of the planning session.

Although the planning is over for now, you will be explicitly asked to update your plan mid-way through the game. However, things change continually, and this is especially true within the dynamics found in a Prosperity Game™. You would be well advised to continue to conduct some level of environmental scanning throughout the game sessions.

An optional planning exercise you might consider, given sufficient time, is "road mapping." Your facilitator has blank timeline forms available for this purpose. The same forms may also be used in tracking game events as they unfold.

Step 3. Your first move – selecting Toolkit Options

At this juncture you have a set of strategies to pursue, but so what? Where and what are the game pieces to move?

In a Prosperity Gamë™ a basic move takes place when a team allocates some of its resources to a technology or policy. There are actually two types of investment moves. In the first session of active game play, investments are made in 'Toolkit Options,' while in all other sessions an instrument called an 'Agreement' is used. (Hang on for a little while before we get to that one in any detail!) Toolkit Options (TKOs) can be thought of as simplified Agreements, and serve as a "jump start" to your creative abilities while also introducing game move concepts. Resource investments are kept simple in a TKO – only money in the form of a line of credit is used; Agreements, by way of contrast, use multiple resource types (e.g., money, influence, technology, laws, and regulations) that are issued to each team as "chits." TKOs are a list of technologies, methodologies and policies that you might use to pursue your objectives; they are provided in the Players' Handbook along with prices. TKOs are categorized as being either technology or policy oriented (mixed ones are "forced" into the paradigm). Agreements that you will be drafting in later sessions, on the other hand, not only require discussion of the expected outcome or results, they require discussion of partnering arrangements (terms and conditions), an analysis of the issues that must be resolved in arriving at the outcome (justification), and an estimate of the type and amount of resources needed to complete the task. One example policy TKO for the game might read:

Toolkit options "jump start" your creative abilities.

> *Congress modifies tax laws to encourage owners of utilities to retire inefficient power plants and replace them with more efficient generating units. (150 credits)*

In order to for you to invest in TKOs, your team will be given a fixed amount of money that can be used during this session. These are generally referred to as credits, and are "in the bank" so to speak. The amount of funds available to each team will be based roughly on relative influence, and thus will vary from team to team. The Toolkit section of the handbook contains a list of the total number of credits issued to each team. These data can be used both as a guide on how much you have available to invest in TKOs, and as intelligence data for your environmental scanning. If you compare these data with the TKO prices, it should be obvious that the total amount of money available in the Toolkit session falls far short of that required to execute all of the available options, and your team only has a fraction of it.

In reality, however, the price given in the TKO list in the handbook is not an actual purchase price. I know that you are well aware of the fact that "throwing" a certain amount of money at a problem does not guarantee a desired outcome. Success may be limited by legal barriers, technological limitations, or political action. In order to simulate investment risk for the TKOs, success or failure is determined using probabilities (or the "roll of the dice" – a computer program in reality). The listed price for any given option is used in the game to represent the value at which the option will nominally have a 50% chance of success. These 'mean' cost values are intended to reflect the approximate difficulty of achieving success on a relative basis (NOT in absolute, real dollars). Investments larger than the 50% price will increase the Toolkit's chance of success, while smaller investments will decrease its success probability (one-half of the 50% price is the smallest allowable investment that will be considered). No investment in a TKO has a 100% chance of success. You can also choose to make "negative" investments against policy TKOs, which have the effect of offsetting "positive" investments; this allows the game to simulate lobbying on both sides of an issue. The investments from all teams are summed for each option before the "roll." Complete details on the probability function actually used in the game can be found in the Player's Handbook.

In order to invest successfully in TKOs, from a team perspective, your actions should include the following steps:

1. *Select and prioritize TKOs that support your team's strategies and are within the scope of its vision.*
2. *On the basis of your environmental scan, identify areas of interest you hold in common with other teams. Lobby these teams to invest in TKOs of mutual benefit. You may want to consider formalizing any investment agreements that arise out of these negotiations. (In a Prosperity Game, written agreements can be arbitrated if one party fails to live up to the terms. A simple memo can be used, and it should be signed by one member and the facilitator from each team involved; a copy should be provided to the Control Team.) Partnering with other teams is a good way to leverage your funds, and thus increase your chances of success.*
3. *With the intelligence (good or bad) gained on what other teams are doing, your team must allocate its credits among the TKOs of interest. When doing this, you should keep your priorities and TKO success probabilities in mind.*

To help you in allocating resources to TKOs, a team-specific spreadsheet will be provided to you by your facilitator at the beginning of the session. This spreadsheet will list all of the handbook TKOs with prices and a blank entry box for you to record your investments. An example representing a portion of the U.S. Congress Team's Toolkit investment spreadsheet follows:

TOOLKIT OPTIONS: MAKE YOUR INVESTMENT CHOICES HERE				
Assume standard deviation = 1.0 x mean (50%) investment				
Option number		50% probability ($)		US Congress
	Assets available $ >>			300
	TECHNOLOGY OPTIONS			
T1	An integrated, accessible set of databases is established of critical information necessary to conduct IE related studies at the U.S. national level. Data include: industrial economic profiles; land uses; environmental contamination problems…	150		
T2	A risk-based investment tool is developed by investment and insurance groups that is based on a systems (IE) approach. The metrics included are: use of non-renewable resources; greenhouse gas emissions; other pollution of air, water…	50		

But wait! What if the TKOs in the handbook don't provide the desired starting points for your team's strategies? Never fear! You can create your own options. To help you in this regard, a 'New Toolkit Option Form' is available from your facilitator.

INDUSTRIAL ECOLOGY PROSPERITY GAME™
NEW TOOLKIT OPTION FORM

Option Number

Wording:

When you write up your new option, please be as specific and brief as possible. Clarity is important. Once you have it drafted, have your facilitator review, sign, and assign a tracking number to it. Then you must deliver the form to the Control Team; in turn, they will evaluate its merit, possibly require clarification or changes, determine a price, enter it into the database, and distribute a copy of the option to all teams. (If you have your own estimate of the price that should be set, include it on the form and be prepared to defend it with the Control Team.)

Your completed Toolkit investment spreadsheet is a deliverable to the Control Team at the end of the Toolkit session.

As an option, you may choose to post your planned TKO investments on a large Toolkit board that is maintained by the Control Team. The information (or misinformation) presented on this board is unofficial, but it may be useful as part of the environmental scanning conducted by you or by the other teams.

The final results of the TKO investments will be published and implemented into the game. This means that any successful TKOs may be appropriately built on by any team in the Open Negotiation sessions that follow.

Step 4. Follow-on moves – developing Agreements

Now that your feet are wet, it is time to roll up your sleeves and make a concerted effort at fulfilling your team's objectives. The primary move used in executing your strategies is called an 'Agreement,' and it will be used throughout the remainder of the game in what are called 'Open Negotiation' sessions. The agreement move replicates real-life activities including negotiations, consensus building, resource allocation, and contracting between stakeholders. In simple terms you can think of an Agreement as a contract or law, depending upon your point of view and the parties involved!

The primary move used in executing your strategies is called an Agreement.

Possible agreements you might participate in include:

1. *investing in basic research or development of new technologies;*
2. *investing in prototype or pilot project demonstrations;*
3. *developing infrastructures;*
4. *licensing new technologies;*
5. *manufacturing and selling products;*
6. *forming partnerships, joint ventures, or virtual companies;*
7. *and getting new laws passed or old laws changed.*

The actual agreements you get involved in should be firmly grounded in your strategies, and they may originate internally or externally from your team. The content of an agreement you participate in may explicitly reflect one of your strategies, or it may only provide a necessary sub-element of a strategy.

To illustrate the process let's continue our imaginary game and go through an example that builds on a potential strategy presented in 'Step 2.' The strategy in question reads something like:

> *Reduce the pending impact … of the loss of oil through … [an] improved transportation infrastructure … [with] improvements … available for deployment every five years.*

For the purposes of our discussion we are assuming that this strategy is one of those selected for further development by your team for possible implementation into an Agreement. Whether this development is carried out as an assignment for an individual followed by team review or done solely in committee is determined by your team's organization and rules that were established at the beginning of the game. In either case, we will assume that the final version of the results expected from the proposed "program" reads as follows:

> *Develop and prototype (in one city) a public/private transportation system that includes components in vehicles ($1500) and at traffic control points ($10,000/mile). Destination, location, and routing information will be exchanged between vehicles and routing control computers. Traffic flow and speed information will be exchanged between roadside locations (e.g., traffic lights) and the routing computers (and even construction and accident databases). Algorithms will dynamically control traffic flow to increase efficiency. Emergency vehicles can be assigned priority ratings that can override normal system efficiency considerations. The program will be funded at a level such that it will be completed in three to four years.*

At some point in this process your team may buy into the idea sufficiently that it should be given a unique control number and title. Your facilitator will assign the tracking number. For the purpose of this exercise let's assume that this is the tenth agreement your team has drafted, thus resulting in a control number of 'RP-10.' The team is responsible for selecting a descriptive title for the project, and in this case comes up with 'Intelligent Infrastructure'; however, since this is a mouthful, you also give it a simple working alias of 'SMART.'

To execute any agreement, resources must be invested.

In order to actually execute any agreement, resources must be invested. This requires: (1) an assessment of how hard it will be to actually achieve the desired results; leading to (2), an assessment of the type and amount of resources required; followed by (3), effective lobbying of other teams to raise the necessary resources required beyond those your team has or is willing to invest.

First things first. In assessing the SMART program you identify several relevant facts from real life that you document. Namely:

> *Although this idea is not new, technology limitations in a number of areas have prevented the idea from maturing. Recent advances in positioning systems (GPS) in terms of performance and cost, digital cellular networks, and massively parallel computing have made the concept practical.*

From your environmental scan, you might also know of several game agreements that will provide additional required technologies or policies. Previous agreements that you build on should be explicitly recognized and documented. For the present example, we can envision several required technologies that will make our task easier (and thus costs lower) that were executed in our imaginary tutorial game:

> *The necessary transportation control logic model also has theoretical underpinning by virtue of the successful 'Transportation Model' (DOE-4) completed in the last session. The large information flow can also be managed thanks to the National Computing and Networking Initiative (FIA-3) that developed the necessary protocols and hardware for supporting the secure, high-bandwidth computing networks that will be fundamental to this system.*

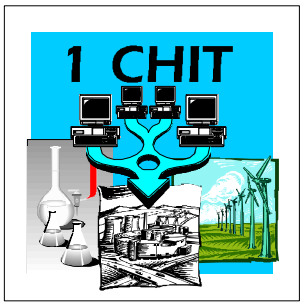
Although not explicitly illustrated in this example, your discussion concerning project (agreement) results or justification may also include comments on why it is important, how it addresses sustainability, or how IE principles are involved.

The next thing you should do is "price" the Agreement. In the Toolkit session, monetary resources were represented by credits, while legal, technical, and political uncertainties were added by way of the "roll of the dice." In the Open Negotiation sessions, however, this simple arrangement is replaced by one that uses four types of resources: dollars (money); regulations and laws; influence; and technology. The denomination used for all of these resource types is called a "chit." Sufficient chits from each resource type are required to overcome any uncertainties in an agreement. (The degree of difficulty in raising resources when they are severely limited adds uncertainty.)

<u>Dollars (money)</u>: This type of chit represents real monetary capital that is available to a team for investing as it sees fit.

Regulations and Laws: Chits of this type represent the real political control that resides in a team. R&L chits represent the ability to pass laws (like Congress) or issue regulations (like EPA or your local city council).

Influence: These chits are used to represent political influence in the broadest sense. They do not represent the influence that money always has as well, but the more ephemeral form that includes "public opinion."



Technology: The last category of chits is intended to capture the concepts of patents, proprietary processes, licenses, and even the latent capabilities of an organization's technical staff (engineers and scientists).

In order to price an Agreement, all of these categories must be considered. The process used in the game ranks an agreement against each chit category using a designation of 'high,' 'medium,' 'low,' or 'none.' These designations correspond to chit values of 3, 2, 1, or 0, respectively.

Let's imagine that you have now completed an initial evaluation of the SMART program costs. You estimated (in pencil!) that you had a medium-sized project (two dollar chits), that no laws or regulations applied (no regs & laws chits), that a moderate amount of influence would be required to get people to participate (two influence chits), and that only modest technology improvements were required (two technology chits).

Now you have reached the stage where it is time to get the Control Team involved. FIRST your facilitator must review your draft agreement for completeness and legibility, and initial it. THEN you must take the agreement to Control. Usually one person, the Game Director (Marshal Berman), is responsible for reviewing all agreements at this stage of their development. **Be prepared to defend your agreement.** Changes and clarifications are required more frequently than not. In our example, the final costing was changed so that the number of 'dollar' chits increased to three, and one 'regs & laws' chit was required. The Game Director also required that one 'dollar' chit come from the Federal Advisory & Regulatory Agencies (FAR) Team (representing the traditional sponsorship of such projects by federal agencies), and that the 'regs & laws' chit come from the Local Governments Team (representing the city council's and mayor's approval of the project).

You must raise the necessary resources.

Perhaps the most difficult stage for an agreement comes at this point since it is here that you must raise the necessary resources. The total number of chits available for use by any one team or in any one game session is limited (in general they do not carry over). The distribution of chits among the different teams is based roughly on their relative influence for the type of chit being considered. No team has all four types of chits, while some teams have only one type of chit. (The absolute number of chits given to any one team is not public data; the relative number (high, medium, and low) by type of chit given to the different teams is, however, provided in the Players' Handbook.) Thus, except for certain classes of agreements (e.g., Congressional laws), or very simple (trivial?) agreements, teams will not be able to make a move without partnering.

To be effective in raising resources, your lobbying efforts should be rooted in the knowledge you gleaned of the other teams through your environmental scanning. This might include knowledge of the number of the different types of chits that teams have to spend. More importantly, it will include an understanding of the teams' plans and how they overlap with your own strategies. Every team should be executing plans oriented toward sustainability issues, vying for position on the game board by trying to control the scarce resources and enact their strategies. You must simply be aware of common interests. This knowledge will allow you to present your agreements to other teams in a way that shows them why they should invest. In the best of cases partnering will arise because of mutual interests. In some cases support may come only from a quid-pro-quo stance. In the worst of cases a team may be floundering without any plan, and may simply "give" chits away to whoever is the best salesperson.

For the purpose of our current example, "you" partnered with six other teams in order to raise the necessary chits. The terms and conditions of the contract between partners, that is, who is to do what and for what must be documented. In this case:

> *The Resource Providers Team has developed this agreement as a part of its strategy to reduce the pending impact of the loss of oil (1 dollar chit). Manufacturing Team support was received due to the large potential markets of this "eco-friendly" system (1 influence chit). The Universities and DOE Labs Teams will work together to solve the remaining technical innovation needs (1 technology chit each). Federal support was in line with existing agency missions (1 dollar chit from the FAR Team as required). The Local Governments Team sponsored this agreement as a means to help meet air quality regulations (1 legs & laws chit as required plus 1 dollar chit). The Public Team supported this agreement from a quality-of-life perspective that included both the improved air-quality projections as well as the idea of spending less time in traffic.*

Each team must have a representative initial the agreement as well as provide the agreed upon number and type of chits.

To help you in collecting your thoughts and the necessary information, your facilitator has blank agreement forms available. A completed form for the present example is provided below. You may also choose to type and print or e-mail your agreement using provided computer resources.

INDUSTRIAL ECOLOGY PROSPERITY GAME™ AGREEMENT FORM

Agreement *RP-10*

TITLE *Intelligent Infrastructure ("SMART")*

Expected Results: ***Develop and prototype (in one city) a public/private transportation system that includes components in vehicles ($1500) and at traffic control points ($10K/mile). Destination, location, and routing information will be exchanged between vehicles and routing control computers. Traffic flow and speed information will be exchanged between roadside locations (e.g., traffic lights) and the routing computers (and even construction and accident databases). Algorithms will dynamically control traffic flow to increase efficiency. Emergency vehicles can be assigned priority ratings that can override normal system efficiency considerations. The program will be funded at a level such that it will be completed in three or four years.***

Justification: ***Although this idea is not new, technology limitations in a number of areas have prevented the idea from maturing. Recent advances in positioning systems (GPS) in terms of performance and cost, digital cellular networks, and massively parallel computing have made the concept practical. The necessary transportation control logic model also has theoretical underpinning by virtue of the successful 'Transportation Model' (DOE-4) completed in the last session. The large information flow can also be managed thanks to the 'National Computing and Networking Initiative' (FIA-3) that developed the necessary protocols and hardware to support secure, high-computing networks that will be fundamental to this system.***

Circle **rating** for each row	Relative Importance High	Med	Low	None
Dollars: **G**reen	(3)	2	1	0
Regs & Laws: **R**ed	3	2	(1)	0
Influence: **W**hite	3	(2)	1	0
Technology: **B**lue	3	(2)	1	0
Facilitator review:	***JBQ***			
Control team signoff:	***M. Berman***			

Team Chits:	G	R	W	B
Resource Providers	***1***			
Manufacturers			***1***	
Universities				***1***
DOE Labs				***1***
Local Government	***1***	***1***		
Public			***1***	
Fed Adv & Reg Agcy	***1***			
Totals (must = **rating**)	3	*1*	*2*	*2*
Control team acceptance:	***K. Bovack***			

Relates to previous agreement #(s): ***DOE-4 and FIA-3***

Terms and Conditions: ***The Resource Providers Team has developed this agreement as a part of its strategy to reduce the pending impact of the loss of oil. Manufacturing Team support was received due to the large potential markets of this "eco-friendly" system. The Universities and DOE Labs Teams will work together to solve the remaining technical innovation needs. Federal support was in line with existing agency missions. The Local Governments Team sponsored this agreement as a means to help meet air quality regulations. The Public Team supported this agreement from a quality-of-life perspective that included both the improved air quality projections as well as the idea of spending less time in traffic.***

The agreement and chits form a deliverable to the Control Team as soon as it is completed to this point. **Do not** wait to deliver the agreement until the end of the current Open Negotiation session. Once the Control Team formally accepts the agreement (by signature) it becomes part of the game and can be built upon by any team through other agreements.

All approved agreements will be published and implemented into the game. Publishing will take several forms. First, as the originating team you should make copies of the final agreement for all partners; you may also choose to provide copies to other teams. Secondly, the Control Team will post a copy of the agreement in a central location for all to see (past session agreements will be kept in a binder nearby). Thirdly, the Control Team will "post" an electronic copy that will be accessible using a web browser on a computer that will be provided to your team. And finally, the Control Team will maintain a master road map in a common area that will illustrate all approved agreements and their connectivity.

The "best" agreements will be rewarded.

At the end of every Open Negotiation session, all players will be given the chance to vote on the "best" agreement of that session. In casting your vote you might want to consider issues like which agreement exhibited the best IE principles. Partners in the winning agreement (only one per session) will receive their investment back, in kind, for use in the next session. The originating team will receive its investment back, plus one, in the form of wildcard chits. These chits can be used in the place of any other chit in any session (only wildcard chits are allowed to be carried over from session to session).

Summary

Many variations on the theme presented here are possible, generally dealing with how you choose to cooperate and partner. For instance, in the example Agreement, you might have initiated dialogue with potential partners when you were first drafting the expected results rather than waiting until you had to raise the necessary resources. Working with other teams is encouraged at all stages of the game, and it will be a big factor in how well you do.

Now that you have completed this tutorial, you should have a firm understanding of the basic mechanics of playing a Prosperity Game™. You are also now well on your way toward having a challenging and rewarding experience. As one company president and COO said about a previous Prosperity Game™:

> *It was more stimulating than sports and faster paced than life. No one resisted the temptation to take the initiative. Everyone contributed. The resulting cooperation … felt very good.*

So, on with the rest of your preparation, and good luck at the game!